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Assessment of Knowledge regarding Urinary Tract Infection among School Students of Jerash Governorate

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Abstract:

Background: Urinary tract infections (UTIs) are the major health problems in young people. **Aim:** To assess the Assessment of Knowledge regarding urinary Tract Infection among School Students of Jerash Governorate. **Methods:** A cross sectional descriptive research was carried out among 208 students of all school students at Jerash governorate school. **Tool:** contain two parts; socio-demographic characteristics sheet and questionnaire that takes care of the data to assess their knowledge, and it consists of (22) items. Each item has three options: Agree, Neutral, or Disagree. **Results:** The majority of the studied students were from 13 to 18 years old, female, and living in rural areas. Regarding parent's education highest percentage of studied school children was Bch degree and regarding family income the majority of studied school children majority were 500 - 1000 JD. **Conclusions:** The studied students had low level of knowledge regarding UTI with no relation with their sociodemographic data except their parents' educational and income levels. **Recommendations:** Based on the results, prepare educational programs for the school students of Jerash governorate to develop their knowledge of the seriousness of urinary tract diseases, as well as establish units dedicated to counseling and healthy habits. **Key Words:** Knowledge, Urinary Tract Infection, School Students

Introduction

Urinary tract infection (UTI) is a common problem in children, bacterial inflammation of the external or internal urinary way children that causing illness, it considered an important risk factor for the development of renal insufficiency or end stage renal disease (Albarrak et al., 2021).

Many factors influence the predisposition that children may have to UTI including the genitourinary anatomy and function, Contamination by bowel flora, but the children lifestyle can make a child more prone to developing a urinary tract infection. (Tulluset al., 2019)

To diagnose the UTI in children must take urine sample to analysis; elevation in number of WBCs in urine is a result of an inflammatory response of urogenital mucosa to colonizing bacteria. in addition to monitoring the sign and symptom. Traditionally Urine dipstick tests and visual examination of urine samples have been used to diagnose UTI. Urine culturing can benefit healthcare providers by lowering the risk of misdiagnosis and ensuring that patients receive the best treatment possible. (Doern et al., 2016)

Risk factors for UTI in older children and adolescents include the presence of kidney stones, sexual activity, and diabetes. Genetic factors also influence the occurrence of UTI. Administration of an antibiotic may increase the risk of UTI by changing periurethral microflora. (Alsaywid et al., 2023)

Acute complications of UTI are similar to those associated with any febrile illness in a young child. These include dehydration, electrolyte abnormalities, and febrile seizures.(Issa, 2017)

Recurrent UTI can be prevented by preventing constipation and avoidance of urine withholding behavior in toilet-trained children. Although increased oral fluid helps flush bacteria from the bladder, prompts frequent urination, and alleviates constipation, there is limited evidence that it is effective in preventing UTIs(Kerenet al., 2015)

Urinary incontinence, hematuria, and suprapubic or low back pain may also be present. Typically, females with acute dysuria have one of three types of infections: acute cystitis; acute urethritis due to Chlamydia trachomatis, Neisseria gonorrhoea, or herpes simplex virus; or vaginitis due to Candida or Trichomonas. Children older than 5 may have the same symptomatology as adults. As many as 25% of young children without pyelonephritis have renal bacteriuria (Yongzhi et al., 2018)

Aim of the Study

The purposes of this study were to assess the knowledge of school students about the prevention of urinary tract infection at Jerash governorate school.

Research Question

What is the knowledge regarding Urinary Tract Infection among School Students of Jerash Governorate?

Subjects and method

Research design:

Cross sectional descriptive research design was used to conduct this study .

Setting:

The study was conducted at Jerash male and female schools (primary and secondary) at Jerash governorate.

Sample:

The samples were collected through the Google questionnaire form and distributed to all school students at Jerash governorate school, as 208 students responded and participated in answering the questions' then 208 response participants

Tool of the study:

In order to the study aim and objectives, the structured knowledge questionnaire composed of two parts: -

Part One: - Demographic Characteristics Sheet that includes information related Student demographics sheet, which includes (age, gender, Academic Level, Family income, Parents education level, Place of Residence).

Second part: - is a questionnaire that takes care of the data to assess their knowledge, and it consists of (22) items. Each item has three options: Agree, Neutral, or Disagree. The researchers used three points to measure each item on the knowledge sheet. (3) for the correct answer (I agree), (2) for the neutral answer, (1) for the wrong answer (I disagree). The agreement to obtain this tool to use it from **Abdel Rahman et al., (2022)**

Scoring system: The general level of students' knowledge was divided into three levels according to the average score. The level of poor knowledge was (less than 2), the average knowledge level ranged from (2 - 2.5), and the good knowledge level ranged from (more than 2.5 - 3). Excel (version 2010) was used for data analysis.

Content Validity of the Research Tools

Five community health nursing specialists evaluated the research instruments' content validity. The tools' content coverage, item sequencing, clarity, application, relevance, word count, format, and overall presentation were all scrutinized. Modifications were done in accordance with the advice and suggestions of specialists. The validity of the knowledge test tool content was determined in consultation with a team of (7) experts in different disciplines. They all agreed that the questionnaires were clear, relevant and adequate. Minor changes were made based on their recommendations and suggestions.

Reliability

Using Cronbach's alpha, the reliability of the research questionnaire was determined. Based on data analysis, the knowledge component's coefficient alpha was 0.945, while the attitude component's was 0.926.

Method:

An official permission was obtained from Ministry of Education to collect the necessary data for this study. A pilot studies carried out on 10% (21) of sample in a selected setting to test the applicability and clarity of the tools to estimate time needed for each tool and the necessary modification was done and these was not excluded from the total sample of the study. Researcher explained the study purposes

for the manager of school and invited them to participate in the study. First the researchers introduced themselves to the participants, discussed to them the purposes of the research briefly. The researcher was distributed google questionnaire form to all school students at Jerash governorate school. Then it was completed by the participants. The time needed to finish the questionnaire was about ten minutes. This phase lasted for one month.

Ethical consideration

Prior to conducting the research, obtained the approval of the Institutional Review Board (IRB) at Jerash University and targeted school was obtained. The researcher obtain the informed consent was taken from Jerash governorate school students after they were informed of the nature and goals of the study in order to elicit their cooperation. Eligible student who agree to participate in this study will be asked to sign the consent form. For the sake of anonymity and privacy, each assessment page was coded. Participants have the option to leave the before beginning the study.

Statistical analysis

It was performed using SPSS software (version 20). Standard descriptive statistical calculations (mean± standard deviation) and frequencies were used for quantitative and qualitative data, respectively. Average scores were compared by independent t-test. The Chi-square test and one-way analysis of variance were used to evaluate significant differences between the groups. The threshold for statistical significance was set at $P < 0.05$.

Results

Presentation and analysis of data

The current study was carried out to assess Knowledge regarding of Urinary Tract Infection among School Students of Jerash Governorate.

Table (1):- Sociodemographic characteristics of School Children.

Sociodemographic characteristics	Studied School children	
	Total (No)=208	
	No.	%
Age (years)		
6-12	64	30.8
13-18	144	69.2
Gender		

Male	32	15.4
Female	176	84.6
Residence		
Rural	142	68.2
Urban	64	31.8
Academic level		
Grade 1- Grade 3	12	5.8
Grade 4- Grade 6	56	26.9
Grade 7- Grade 9	40	19.2
Grade 10- Grade 12	100	48.1

Table (2): Socioeconomic characteristics of parents of the studied school children.

Items	Studied School children	
	Total (No) = 208	
	NO	%
Parents education		
Diploma	52	25.0
Bch degree	96	46.2
High level certificate	60	28.8
Monthly family income in JD		
<500 JD	72	34.6
500-1000 JD	124	59.6
>1000 JD	12	5.8

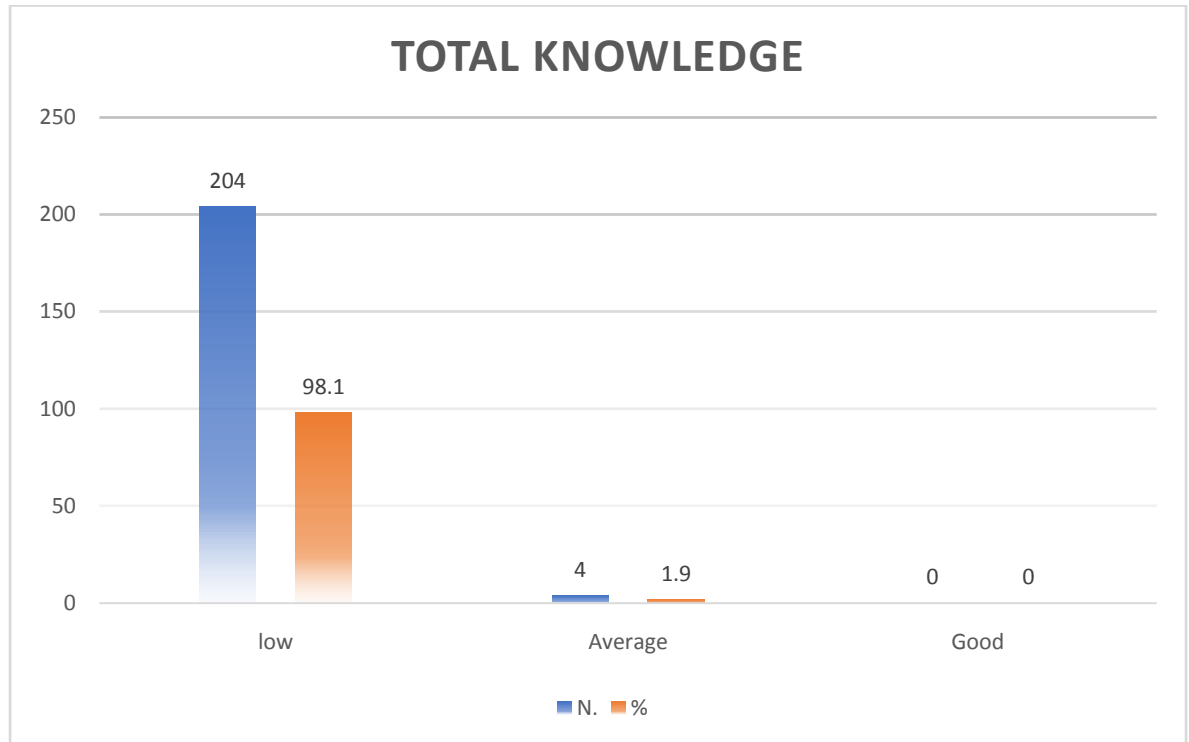


Figure (1): Distribution of study sample According to total knowledge about prevention of UTIs

Table (3): Relation between total knowledge and demographic data of the studied students

Items	Total knowledge level		P. value
	Low	Average	
Age (years)			0.223
6-12	64	0	
13-18	140	4	
Gender			0.510
Male	32	0	
Female	172	4	
Residence			0.232
Rural	138	0	
Urban	64	4	
Academic level			0.221

Grade 1- Grade 3	12	0	
Grade 4- Grade 6	56	0	
Grade 7- Grade 9	40	0	
Grade 10- Grade 12	96	4	
Parents education			0.002*
Diploma	48	4	
Bch degree	96	0	
High level certificate	60	0	
Monthly family income in JD			0.021*
<500 JD	86		
500-1000 JD	124		
>1000 JD	12		

Table 1 : represents percentage distribution of children according to their Sociodemographic characteristics of School children. Regarding age the percentages of age group (6-12) years were 30.8%, (13-18) years were 69.2 % in school children. As regard Gender of children there were most of the studied school children were female 84.6%. While male 15.4%, also highest percentage in studied school children were living in rural areas 68.2% .while third of them 31.8% live in urban areas. Regarding academic level in studied school children Grade 1- Grade 3 represents 5.8%, Grade 4- Grade 6 represents 26.9%, Grade 7- Grade 9 represents 19.2%, Grade 10- Grade 12 represents , 48.1%.

Table 2: represents percentage distribution of studied school children according to socioeconomic characteristics of parents. Regarding parent's education highest percentage of studied school children was Bch degree 46.2%. While Diploma education parents were 25.0% with high level certificate parents were 28.8%. As regard family income the majority of studied school children 59.6% were 500 - 1000 JD, while the minority of studied school children 5.8% received > 1000 JD , and 34.6% received <500 JD.

Figure (1): Distribution of study sample According to total knowledge about prevention of UTIs

Table 3: This table shows that there was no statistically significant difference found between total knowledge level of the studied students and their demographic data

except between their Parents education and Monthly family income in JD (0.002 and 0.021) respectively.

Discussion

The aim of this study was to assess the knowledge of school students about the prevention of urinary tract infection at Jerash governorate school.

As for the studied children's age, it was found that the high incidence of school children aged between 13 - 18 years. This finding disagree with a result of **Tabassum et al., (2021)** who found that the most age students participant was above 21 years , but the study of **Leirstein, (2018)** agree with this finding < 15 years of age that were admitted and treated for a febrile UTI during the study period.

As for the studied children's gender, it was found that the high incidence of school children gender female. This finding disagree with a result of **Ryakitimbo, (2018)** who found that the most age students participant was male , but the (**Seyezadeh, A 2021**) agree with this finding most of study participant was female.

This is congruent with **Navarro et al., (2019)** who carried study about knowledge of UTI among school students in USA who reported that more than three fifths of students were females. Also this findings disagree with **Aolymat et al., (2022)** who conduct study about UTI among Jordian Students who found that more than half of students were males.

As for the studied children's residence, it was found that the high incidence of studied school children were living in rural areas. This finding agree with a result of **Seyezadeh, (2021)** who found that the most school students participant were living in rural area. These results similar with **Maqableh, & Alia, (2021)** who reported that more than two thirds of students live in rural area. On the other hand, this result inconsistent with **Kiani et al., (2020)** who carried study about UTI and its association with UTI, demographic, factors among Chines students who reported that only sixty percent of students live in rural area.

Concerning to students father and mother education, the current study illustrated that one third of them have university educated

The findings of current study cleared that half of student's fathers were employee and nearly three quarter of their mothers were house wife. This match with **Kowalsky et al., (2020)** in the study about the school students and urinary problems for model of healthy behavior who found that sixty percent of the students' fathers were highly

educated and employee. While disagree with **Chróinín, & Coulter, (2012)** who carried study entitled "The impact of initial teacher education on understandings of physical education: European Physical Education Review" who found that more than two-fifths of the students fathers were low education and farmer.

The present study; more than half of students with middle economic class; this result disagreed with **Lee et al., (2021)** who found that two thirds of students have a high socioeconomic class.

Regarding the students; knowledge level about the urinary tract infection

Generally, the total score of students' knowledge toward UTI; it was illustrated that most of students had low knowledge level. Which agreed with **Sequera et al., (2021)** in the study about school students urinary diseases and knowledge requirements who found that the young students had a few knowledge regarding urinary infection and health habits.

In the other hand, **Ali et al., (2020)** in the study "Adherence to recommended guidelines and the relationships with the importance of healthy urinary system in Egyptian students, found that forty-five percentage of the university students had unsatisfactory knowledge level and negative attitude about the urinary tract infection.

The current study found that there was statistical significant difference between student's knowledge toward UTI and their parent's education, residence and socio-economic class but there was no statistically difference regarding the students' age and sex mainly female and their total knowledge level.

The researcher suggests that students whose parents have higher levels of education, live in certain types of residences, or belong to higher socio-economic classes tend to have a better understanding of UTIs compared to students whose parents have lower levels of education, live in different types of residences, or belong to lower socio-economic classes.

This match with **Selamat et al., (2020)** who reported that the students' age and gender, particularly females, did not show any notable association with their overall knowledge of UTIs.

This result is consistent with the findings of a study published in a medical journal found a significant association between parents' education and students' knowledge of UTIs that concluded that higher levels of parental education were positively correlated with better knowledge among students.

Another study conducted in a specific region or country with a diverse socio-economic population reported that students from higher socio-economic classes

demonstrated higher knowledge levels about UTIs compared to those from lower socio-economic classes.

A research study focusing on urban and rural areas found that students living in urban areas, where access to educational resources might be better, had higher levels of UTI knowledge compared to those in rural areas.

In contrast to a study conducted by **Sequera et al., (2021)** in a different setting or population may have found no significant association between parents' education and students' knowledge of UTIs. It suggested that factors other than parental education might contribute more significantly to students' knowledge levels.

Also, a study of **Bazargani et al., (2022)** examining the influence of parents' occupation on students' knowledge of UTIs might have found conflicting results, indicating that parental occupation does not have a substantial impact on students' knowledge.

Abu Hamad et al., (2021) study about the quality of life of that age group in Gaza which revealed that gender difference may due to the fact that girls pay more attention to the cleaning and infection prevention, whereas boys pay moderate attention to the toilet cleaning.

Conclusion:

Based on the results of the present study it concluded that:

The majority of the studied students were from 13 to 18 years old, female, and living in rural areas. Regarding parent's education highest percentage of studied school children was Bch degree and regarding family income the majority of studied school children majority were 500 - 1000 JD.

The studied students had low level of knowledge regarding UTI with no relation with their sociodemographic data except their parents' educational and income levels.

Recommendation:

Given the severity of the present study, further educational programs are required, with a particular focus on increasing school students' knowledge of UTI. Medical professionals, public health workers, and healthcare policymakers should work together to establish a strong disease surveillance system and put in place the necessary policies and interventions that allow for effective health education and preventive health behaviors in order to raise public awareness, and encourage precautionary conduct. Develop ongoing teaching programs for the subjects being studied so that students can learn about the dangers posed by the UTI and the precautions to take.

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